

SMITHSONIAN SCIENCE INFORMATION EXCHANGE PROJECT NUMBER (Do NOT use this space)	U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE NOTICE OF INTRAMURAL RESEARCH PROJECT	PROJECT NUMBER  Z01 HL 00014-01 LBG																				
PERIOD COVERED July 1, 1975 through June 30, 1976																						
TITLE OF PROJECT (80 characters or less)  Storage and Release of Molecules Required for Synaptic Communication																						
NAMES, LABORATORY AND INSTITUTE AFFILIATIONS, AND TITLES OF PRINCIPAL INVESTIGATORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED ON THE PROJECT  <table border="0"> <tr> <td>PI:</td> <td>Marshall Nirenberg</td> <td>Chief, Lab. of Biochem. Genetics</td> <td>LBG NHLI</td> </tr> <tr> <td>OTHER:</td> <td>Richard McGee</td> <td>Staff Fellow</td> <td>LBG NHLI</td> </tr> <tr> <td></td> <td>Saburo Ayukawa</td> <td>Visiting Fellow</td> <td>LBG NHLI</td> </tr> <tr> <td></td> <td>Clifford Christian</td> <td>Special Fellow</td> <td>BB NICHD</td> </tr> <tr> <td></td> <td>Phillip Nelson</td> <td>Chief, Behavioral Biology Branch</td> <td>BB NICHD</td> </tr> </table>			PI:	Marshall Nirenberg	Chief, Lab. of Biochem. Genetics	LBG NHLI	OTHER:	Richard McGee	Staff Fellow	LBG NHLI		Saburo Ayukawa	Visiting Fellow	LBG NHLI		Clifford Christian	Special Fellow	BB NICHD		Phillip Nelson	Chief, Behavioral Biology Branch	BB NICHD
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	Phillip Nelson	Chief, Behavioral Biology Branch	BB NICHD																			
COOPERATING UNITS (if any)  Behavioral Biology Branch, NICHD																						
LAB/BRANCH Laboratory of Biochemical Genetics																						
SECTION Section on Molecular Biology																						
INSTITUTE AND LOCATION NHLI, NIH, Bethesda, Maryland 20014																						
TOTAL MANYEARS: 2.2	PROFESSIONAL: 2.2	OTHER:																				
SUMMARY OF WORK (200 words or less - underline keywords)  The objectives are to devise biochemical assays for <u>neurotransmitter release from neuroblastoma</u> and hybrid cell lines and then to define the steps which are required for neurotransmitter storage and release and factors which regulate these reactions.																						

Project Description:

Major Findings: The results show that the uptake of <sup>3</sup>H-choline into neuroblastoma x glioma hybrid cells, the rate of acetylcholine synthesis and the storage of acetylcholine are regulated by the conditions of cell growth. The results suggest that the evoked release of <sup>3</sup>H-acetylcholine can be obtained but further work is needed to clarify the release process products. The results also showed the presence of a dopamine storage mechanism in some cell lines.

Proposed Course: When the assays for transmitter release have been validated, they will be used to determine the reactions which are required for transmitter release and to determine whether the steps are regulated.

Publications:

1. Breakefield, Xandra O., Neale, Elaine A., Neale, Joseph H. and Jacobowitz, David M.: Localized catecholamine storage associated with granules in murine neuroblastoma cells. *Brain Res.* 92: 237-256, 1975.
2. Rotman, Avner, Daly, John W., Creveling, Cyrus R. and Breakefield, Xandra O.: Uptake and Binding of dopamine and 6-hydroxydopamine in murine neuroblastoma and fibroblast cells. *Biochem. Pharmacol.* 25: 383-388, 1976.